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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,065	10/24/2005	Alexander Glazunov	14219-085US1 P2002,0812 U	2563
26161	7590	06/04/2009	EXAMINER	
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			SAN MARTIN, JAYDI A	
			ART UNIT	PAPER NUMBER
			2837	
			NOTIFICATION DATE	DELIVERY MODE
			06/04/2009	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/529,065	<b>Applicant(s)</b> GLAZOUNOV	
	<b>Examiner</b> Jaydi SanMartin	<b>Art Unit</b> 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 10-12 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-12 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

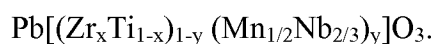
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 10-11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue (US 5118982) in view of Horikawa (US 6383408).

Regarding claim 10, Inoue discloses a piezoelectric transformer (figures 2-11, 14, 16A-B, 18, 25-26, 29) comprising: ceramic layers comprising a hard piezoelectric material (PZT, PT); and an electrode layer comprising copper (column 11, lines 43), the electrode layer being disposed between the ceramic layers.

However, Inoue fails to disclose the piezoelectric material having a general composition of  $\text{Pb}[(\text{Zr}_x\text{Ti}_{1-x})_{1-y}(\text{Mn}_{1/2}\text{Nb}_{2/3})_y]\text{O}_3$ .

Horikawa discloses a piezoelectric ceramic having a general composition of:



In column 3, Horikawa discloses the claimed material as one of the materials having the lowest loss among PZT-based piezoelectric ceramics. Horikawa's invention has the purpose of providing a piezoelectric ceramic having lower loss at high frequency ranges and improved coercive electric field.

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Therefore, it would have been obvious at the time of the invention was made to use a piezoelectric ceramic having the general composition of  $\text{Pb}[(\text{Zr}_x\text{Ti}_{1-x})_{1-y}(\text{Mn}_{1/2}\text{Nb}_{2/3})_y]\text{O}_3$  for providing a more reliable element as explained above.

Regarding claim 11, Inoue discloses the use of a polyvinyl binder (col. 6, line 56).

Regarding claim 16, please note that the method of making a device does not differentiate from the prior art. The limitation has been given little patentable weight.

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue (US 5118982) in view of Horikawa (US 6383408) and further in view of Kikko.

The combination of Inoue and Horikawa discloses the invention as explained above. Inoue discloses the stack being produced from ceramic green foils. However, Inoue fails to disclose the use of a thermohydrolytically degradable binder, wherein the binder is a polyurethane dispersion.

Kikko discloses a piezoelectric ceramic composed of a piezoelectric ceramic powder such as PT-PZ and a binder such as polyurethane. Kikko produces a dense piezoelectric ceramic layer.

Therefore, it would have been obvious at the time of the invention was made to use a polyurethane dispersion to form a dense piezoelectric ceramic layer.

#### ***Response to Arguments***

4. Applicant's arguments with respect to claims 10-12 and 16 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaydi SanMartin whose telephone number is (571)272-2018. The examiner can normally be reached on M-Th 9-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Benson can be reached on 571-272-2227. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jaydi SanMartin/  
Primary Examiner  
Art Unit 2837

6/1/09